catheterization have been created to function in client server mode, providing enhanced function and electronic data transfer. The network approach is permitting expansion of the CDB into areas not previously included, specifically electrophysiology, congestive heart failure and echocardiography. Ultimately the financial data should be transferred over the network as well. This model, consistent with contemporary computing, is already improving daily activity and is expected to yet have a greater impact as the CDB, access tools and local systems continually evolve and improve.

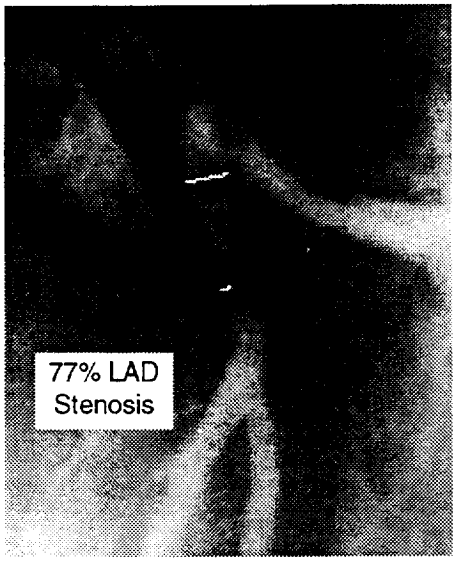
1054 Computerized Cardiology Laboratory

Wednesday, March 22, 1995, 9:00 a.m.–12:30 p.m.
Ernest N. Morial Convention Center, Hall B

1054-1 Cine Images in Cath Reports and Referral Letters: A Complete Report Generated On-line in Three Minutes

J. Larry Klein, Ryan M. Gill, Walter E. Mashman, Sara D. Gatlin. *Emory University, Atlanta, Georgia*

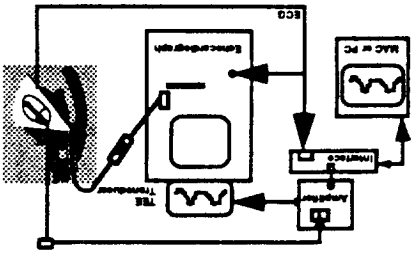
We have developed a multi-user 4th Dimension™ Macintosh™ database program that logs procedures, keeps inventory and generates reports and referral letters. In addition to the text output, quick and simple methodologies allow cine images to be captured in the cath lab, and automatically incorporated into the reports and referral letters. The images are digitized using standard Macintosh computers with a high quality gray scale digitizing board. The software utilized is the public domain NIH Image software package. Macros have been written to make the image acquisition and storage process very simple requiring only a few keystrokes. If desired, quantitation of diameter stenosis, vessel size, ejection fraction or valve area calculations can also be easily performed. Included images are not limited to those acquired in the cath lab. Scanned hemodynamic tracings, EKGs or any other image data can be easily incorporated into the patient's database record off line. Images are stored directly in the database and along with the report can be retrieved at anytime. To conserve space and minimize network traffic, the images are compressed approximately 10 to 1 using standard Macintosh Quicktime™ routines. Alternatively, the images can be stored external to the data base so that other applications can have access to them as well. The entire process of generating a report, complete with images can be accomplished in less than 3 minutes and requires minimal training. The reports and letters are printed on standard laser printers and the image quality is excellent. As the image to the left shows, a picture is truly worth a thousand words. This user friendly system allows the clinicians to better care for their patients by giving them easy access not only to the written reports, but also to high quality angiographic images.



1054-2 EchoVIEW: Simultaneous Echocardiographic and Physiologic Data Collection and Analysis Software

Neil L. Greenberg, Pieter M. Vandervoort, William J. Stewart, James D. Thomas. *The Cleveland Clinic Foundation, Cleveland, Ohio*

The EchoVIEW software package has been developed for the acquisition and analysis of simultaneous echocardiographic and physiologic data on both Macintosh and PC platforms using LabVIEW (National Instruments, TX). This graphical programming environment allows for data visualization and analysis using a variety of modules, called virtual instruments (VIs). The data acquisition VI allows for real-time visualization, digitization, and storage of eight physiologic waveforms. Available inputs signals include fluid-filled or high-fidelity micromanometer pressures, surface or atrial electrocardiograms, and area or volume from acoustic quantification. Acquisition variables including signal sources, amplification parameters, and sampling frequency are user selectable. EchoVIEW's physiologic data processing VIs include automated analysis of pressure waveforms (relaxation rate and dp/dt), transvalvular gradients (instantaneous, peak, and mean pressures), and on-line reconstruction of pressure-volume loops. Doppler echocardiographic analysis VIs have also been developed using a LabVIEW image processing (IP) library called Concert V.i (Graftek Imaging, France).



EchoVIEW's IP VI's include digital image readers, filtering routines, and velocity profile extraction from pulsed, continuous, and color Doppler images. The package is currently used in research and clinical environments to investigate diastolic function, left atrial appendage electrical/mechanical function, and transvalvular catheter and Doppler gradient measurements. The software package has proven to be an essential tool in studying complex cardiovascular problems where simultaneous acquisition and analysis of hemodynamic, electrophysiologic, and echocardiographic information are important.

782 Coronary Intervention: Device Selection

Wednesday, March 22, 1995, 10:30 a.m.–Noon
Ernest N. Morial Convention Center, La Louisiane A

10:30

782-1 Excimer Laser Coronary Angioplasty Versus Balloon Angioplasty Used in Long Coronary Lesions: The Longterm Results of the AMRO-Trial

Yolande E.A. Appelman, Jan J. Piek, Pim J. de Feyter, Jacques J. Koolen, Sipke Strikwerda, James R. Margolis, George K. David, Ken Redekop, Eline v. Swijndregt, Patrick W. Serruys, Jan G.P. Tijssen, AMRO study group. *The Netherlands*

From September 1991 until November 1993 we randomized 308 patients with 325 long coronary lesions (>10 mm) to Excimer Laser Coronary Angioplasty (ELCA, n = 151) or Balloon Angioplasty (BA, n = 157). We report on the longterm clinical and angiographic outcome of this trial. Procedural success (PS) was defined as <50% residual stenosis at the end of the procedure. Clinical endpoints were: death (D), myocardial infarction (MI), coronary bypass surgery (CABG) or repeat angioplasty (re-PTCA) of the randomized segment within 6 months follow-up. Angiographic endpoint was the net gain (NG) in minimal lumen diameter at six months follow-up relative to the pre-procedural baseline determined by a computer-assisted automated edge detection algorithm (CAAS II). Functional status (FS) at six months was graded according to the Canadian Cardiovascular Society classification.

Results: Baseline patient characteristics were similar in both groups. ELCA was followed bij BA in 98% of the treated lesions.

	n	PS (%)	D/MI/CABG/re-PTCA	NG ± SD	FS (0-IV)
ELCA	151	80	0/7/16/32	0.4 ± 0.7	91/17/31/11/1
BA	157	79	0/9/17/29	0.5 ± 0.7	94/17/27/17/2